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Corn Borers on the March

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compared with 1,055 borers per 100 stalks in the untreated check plots. The per-acre yields were 79 bushels (Aug. 21), 75 bushels (Sept. 1) and 72 bushels (not sprayed).

Ground Versus Air

Both air-borne and ground spraying equipment have their good and weak points. Ground spraying is a little more reliable. You can spray in more kinds of weather. And you are a little more certain of getting a thorough coverage from the ground than from the air.

Air spraying is faster. It may be more convenient for out-of-the-way fields. Although spraying by air requires very calm conditions—wind less than 10 miles per hour—you can often spray by air when fields are too wet for ground equipment.

The type of plane used will make some difference in the width of spray strip that can be covered. Stearman-type planes have more horsepower and a larger wing area than Cub-type planes. The greater wing turbulence and propwash help to churn up the spray vapors and get good coverage in your corn. Such things, along with the weather, wind and lay of the land, affect the proper use of air equipment.

Corn Borers on the March

by Harold Gunderson

DRIVING THROUGH the state this fall you wouldn't get the impression that the corn borer was putting Iowa out of the tall corn business. We've had two record crops in Iowa since the corn borer first appeared in 1942. Even though corn borers had spread through every county in the state by 1948, the damage wasn't crippling. The answer is that we've been able to control the borer fairly well.

Still, our experience in corn borer control is meager. We are seeking better control methods. We don't know exactly what the future holds in the battle against the borer.

Serious loss from the corn borer begins when fields become infested with about one borer per stalk. So the number of counties with this average population gives us some measure of the economic loss.

First Borer in 1942

We had to look pretty hard to find the first corn borer in Iowa on August 10, 1942. But when we did, we soon found others in 20 counties along the Mississippi River. People were quite disturbed. Some had visions of disaster in Iowa's cornfields.

By 1943 one county had an average of about one borer per stalk. In 1944 there were two; in 1945, 7; in 1946, 19; and in 1947, 37. Finally this last season we had 72 counties in Iowa that averaged 1 borer or more per stalk.

We've been searching for new, better methods of control ever since the corn borer was first found. So let's review the situation. Let's see what we've learned in the last 6 years.

From 1942 to 1945 about the only thing we could recommend was to destroy all corn crop residues in which borers might overwinter. Ensiling, shredding or deep clean plowing was stressed. The theory was—the only good corn borer is a dead one.

This recommendation still stands where crop practices, soil types and rotations allow it. But it is not advised where destroying crop residues is contrary to sound cropping practices or where it interferes with erosion control.

We also recommend growing corn varieties which stand up under the attacks of the borer. Our local corn variety tests have shown this. Varieties that feature strong stalks and shanks as well as high yield may cut corn borer damage as much as 50 percent, even if you do nothing else to control the borer.

Research at the Iowa Agricultural Experiment Station has shown considerable differences in the ability of different varieties to hold up under the attacks of the corn borer. Researchers also have found that certain qualities in the corn plant may discourage the corn borer. Some day we may have corn varieties so distasteful to the corn borer that he won't even look at them.

DDT Main Weapon

But today and for the immediate future, the main weapon against corn borers is still DDT. This is not a perfect insecticide by any means—it has its drawbacks. Under certain conditions DDT residues on corn may be dangerous if fed to dairy cows in production. Careless application of DDT in fields may injure fish and other wildlife in near-by streams, ponds and fence rows.

Although DDT does offer effective control for corn borers, the control measures have to be carefully applied. Proper timing of spray application is extremely important. You, the farmer, must be able to recognize corn borer eggs, to make egg counts, and to decide whether or not to treat. You must know what form of DDT to use, and how much to use per acre.

Last summer we found that our corn borer counts were not accurate unless fields were examined at least every other day. Each field had to be examined separately. The count in your own field and in your neighbor's field across the road may differ considerably. That's why you can't afford to leave the job of counting borers up to someone else. Each field needs close attention and careful counts if spraying is to be timed for best control.

It is not likely that we have seen our worst borer damage yet. We will need more and better controls. And each individual farmer must learn to know them, for he must make the final decisions of when and how to treat. Custom spray operators, county extension directors or neighbors may advise—but the loss or gain is yours.